

**REMARKS**

Claims 6, 15, and 24 are amended. No new claims are added. Claims 2-27, 29-48, and 50-58 are pending for consideration. In view of the following amendments and remarks, Applicant respectfully requests that this application be allowed and forwarded on to issuance.

**The § 112 Rejection**

Claim 48 stands rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which is, in the Office's opinion, not enabled. Specifically, the Office argues that "using only information that it receives and its on-board componentry" is not enabled. Applicant respectfully disagrees and traverses the Office's rejection.

Applicant refers the Office to the specification starting at page 53, line 4, to the section entitled "Exemplary Context/location Aware Cell Phone Architecture." This section describes but one way in which the subject matter of claim 48 can be practiced. For the Office's convenience, this section of the specification is provided in its entirety just below:

**Exemplary Context/location Aware Cell Phone Architecture**

Fig. 14 shows an exemplary cell phone architecture 1400 that can be used to implement the context/location aware cell phone described above and below. It is to be understood and appreciated that the described architecture constitutes but one exemplary architecture that is capable of implementing a context/location aware cell phone. Accordingly, other architectures can be used without departing from the spirit and scope of the claimed subject matter.

Architecture 1400 includes a number of components that are similar to or the same as components that are discussed above. Accordingly, these components are not discussed in much detail

1 here. These components include location service module 1406  
2 (which can also be considered as a context service module), location  
3 provider interface 1410, location providers 1412, privacy manager  
4 1408.

5 A cell phone settings engine 1404 is provided and is  
6 communicatively linked to location service module 1406 and  
7 application program interface/cell phone setting module 1402. The  
8 cell phones setting engine 1404 is responsible for receiving context  
9 or location information from the location service module 1406 and  
10 responsive thereto, adjusting or otherwise manipulating a cell  
11 phone's settings so that the cell phone behaves in a manner that is  
12 consistent with acceptable behaviors for a given location. That is,  
13 cell phones exhibit behaviors that in some locations might be  
14 appropriate and in others would not be. These behaviors include,  
15 without limitation, such things as (1) being on or off, (2) having a  
16 ringer turned on or off, (3) being in vibration mode as opposed to  
17 having a ringer turned on, (4) having low, medium and high pitch  
18 volumes, (5) forwarding calls to certain phone numbers, (6)  
19 functioning in a pager mode in which voice information is converted  
20 into text information, and the like.

21 Consider, for example, item (1) above. In the context or location of  
22 an airplane, the majority of the time a cell phone must be off. It is  
23 acceptable in such locations to have a cell phone on when, for  
24 example, the plane is sitting at the terminal gate. But, as soon as the  
25 plane pushes back from the terminal gate, passengers are typically  
informed by the flight attendants that their cell phones and other  
electronic apparatus must be turned off. In accordance with the  
described embodiment, and as described above and below, each cell  
phone on an airplane can be informed of its context or location, and  
can then automatically adjust its behavior by turning itself off until it  
is no longer located on the airplane. Additionally, consider item (2)  
above. In a movie theater, as noted above, it is common courtesy to  
turn one's cell phone off or place it in vibrate mode. Yet, many  
people forget or refuse to do so. Given the techniques and structures  
described above and below, cell phones that are determined to be in  
the location of a movie theater can automatically adjust their  
behavior to conform to acceptable norms.

In the described embodiment, cell phone settings and associated  
location information can be stored on the cell phone itself.  
Alternately, the cell phone is configured to receive cell phone setting

1 information via application program interface/cell phone settings  
2 module 1402. Specifically, in one embodiment, a number of  
3 different settings enforcement entities 1418 can be provided that are  
4 responsible for transmitting cell phone settings information to cell  
5 phones that are in their vicinity. In the described example, such  
6 entities can include, without limitation, Blue Tooth entities, location  
7 beacons (as described above), diffused IR entities and the like.  
8 These entities transmit cell phone settings information that is  
9 received by the cell phone via interface 1402. This information is  
10 passed to the cell phone setting engine 1404 which then ensures that  
11 the cell phones is set to the proper setting.

12 Also included in this architecture is a source of location-based  
13 settings 1414, and a source of well-defined locations 1416.  
14 Location-based settings can come from any suitable source. For  
15 example, the settings can come from the settings enforcement  
16 entities mentioned above. Alternately, the location-based settings  
17 can be stored on the cell phone. Examples of this are given below.  
18 Similarly, the well-defined locations 1416 can come from any  
19 suitable source either on or off the device.

20 Fig. 15 is a flow diagram that describes steps in a method in  
21 accordance with the described embodiment. The method can be  
22 implemented in any suitable hardware, software, firmware, or  
23 combination thereof. In the illustrated example, the method is  
24 implemented in software that is executing on a cell phone. One  
25 exemplary software architecture that is capable of implementing this  
method is described above in connection with Fig. 14. Other  
architectures can, of course, be used.

Step 1500 receives context information that pertains to the current  
context of a cell phone. Any suitable methods, techniques, or cell  
phone components can be used to receive this information. In  
addition, the context information can come from any type and/or  
number of context providers. Further, the context information can  
comprise any suitable type of context information. For example,  
location and user constitute two examples of specific context. The  
cell phone processes this information and step 1502 modifies the  
behavior of the cell phone responsive to the context information.

## Example

Fig. 16 shows an exemplary system 1600 in which a context-aware cell phone is employed. In this system, as the cell phone enters different locations, it determines its location and then modifies its behavior in accordance with behaviors that are acceptable for that location. Alternately, the cell phone can simply receive information that is then used to adjust the cell phone's settings.

In the illustrated example, the different locations include a theater 1602, restaurant 1604, work 1606, home 1608, and a sports arena 1610. Notice that for the theater, restaurant, work and sports arena there are location beacons (not specifically designated) that can provide not only location information, but other information such as, but not limited to, cell phone settings. For each illustrated cell phone, there are a number of associated behaviors that can be modified given a particular location.

Notice in this example, that at each different location the cell phone exhibits a different behavior or set of behaviors that are appropriate for that location. For example, in the theater 1602, the cell phone ringer is OFF so that other movie patrons are not disturbed. In the restaurant 1604, the ringer is ON but the volume is low so as not to disturb fellow diners. At work, the cell phone is OFF but is in a mode to forward calls to a work number. At home 1608, the cell phone ringer is ON, but it is in a mode to forward calls to the home number. At the sports arena 1610, the ringer is ON and its volume is VERY HIGH. In addition, the phone is in vibration mode. This ensures that the user is most likely to receive their calls in the noisy arena.

In one embodiment, the association of location and behaviors is simplified through the use of multiple class types and various attributes that are associated with the class types. The class types define certain high level locations types. Each class type's attributes define the behavior of the cell phone when it is in the vicinity of an instance of that class. As an example consider theater 1602 which is an instance of a class type 1. The attributes associated with a class type 1 are that the cell phone ringer is OFF. No other attributes are associated with this class type. Restaurant 1604 is an instance of a class type 2. The attributes associated with this class type are that the cell phone ringer is ON and the volume is LOW. Work 1606 is an instance of a class type 3. Attributes associated with this class

1 type are that the ringer is OFF and calls are automatically forwarded  
2 to an office phone. Home 1608 is an instance of a class type 4  
3 whose attributes are that the ringer is ON and calls are automatically  
4 forwarded to a home telephone number. Sports arena 1610 is an  
5 instance of a class type 5 whose attributes include that the ringer is  
6 ON, the volume is VERY HIGH, and vibration mode is ON.

7 Fig. 17 is a flow diagram that describes steps in a method in  
8 accordance with the described embodiment. The method can be  
9 implemented in any suitable hardware, software, firmware, or  
10 combination thereof. In the described embodiment the method is  
11 implemented in software. In the discussion that follows, the flow  
12 chart comprises two separate but related portions. The portion on  
13 the left designated "Location Service" comprises steps that can be  
14 implemented by a location service that is not onboard a cell phone.  
15 The flow chart portion on the right designated "Cell Phone"  
16 comprises steps that can be implemented by a context- or location-  
17 aware cell phone.

18 Step 1700 defines one or more class types and step 1702 associates  
19 attributes with the class types. The class types are intended to  
20 describe certain types of locations where, for example, certain cell  
21 phone behaviors are desired. The attributes that are associated with  
22 the class types define the cell phone behavior that is desired for that  
23 class type. Various examples of this are given in Fig. 16. For  
24 example, for a class type 1, attributes are that the ringer is turned off,  
25 and so on. Step 1704 associates class types with multiple different  
locations. Each location is associated with a class type. Accordingly,  
at these locations, cell phone behavior of location-aware cell phones  
can be governed by the attributes that are associated with that class  
type. This provides a simple infrastructure for implementing context-  
aware phones. By utilizing the concept of class types, those individuals  
who are in charge of overseeing the context-awareness of their particular  
locations need not be concerned with anything other than selecting the  
correct class type for their location. They can do this by simply reviewing  
the attributes that are associated with the different class types and then  
selecting an appropriate class type.

Step 1706 provides information to one or more cell phones regarding  
a particular class type for a given location. This information can be  
provided in any suitable manner and is typically provided when the  
cell phone enters the vicinity of the location. Recall that Fig. 14

1 described three settings enforcement entities in the form of Blue  
2 Tooth, location beacon, and diffused IR entities. These entities can  
3 wirelessly transmit the class type information to cell phones that are  
4 in their vicinity. Step 1708 provides information to one or more cell  
5 phones regarding attributes associated with the particular class type.  
6 This step informs the cell phones of the desired settings for that  
7 particular location.

8 Step 1710 receives information regarding a particular class type  
9 associated with a current cell phone location and step 1712 receives  
10 information regarding one or more attributes associated with that  
11 class type. It will be appreciated and understood that only the class  
12 type or only the attributes can be transmitted to the cell phone. In  
13 the former case, the cell phone can maintain in its storage the various  
14 settings that are associated with the class types (i.e. such as in a  
15 location-based settings store 1414 (Fig. 14)). In the latter case, the  
16 cell phone can simply process the attribute information and adjust its  
17 settings accordingly. Step 1714 modifies the behavior of the cell  
18 phone based on the attributes that it receives. Accordingly, the cell  
19 phone's behavior is modified in accordance with behaviors that are  
20 determined to be appropriate for the cell phone's location.

21 Step 1716 determines if the cell phone has left the current location.  
22 This step can be implemented in any suitable way. For example,  
23 there may be a separate location beacon near location exits that  
24 inform the cell phones that they are leaving the premises.  
25 Alternately, the strength of a beacon signal that signals the location  
may grow weak to a predetermined threshold so that the cell phone  
knows that it is no longer at the previous location. If step 1716  
determines that the cell phone has left its current location, step 1718  
reverts the cell phone to its default or previous settings. If, on the  
other hand, step 1716 determines that the cell phone has not left its  
current location, the current settings are maintained (step 1720).

In accordance with the described embodiments, context-aware or  
location-aware cell phones are provided. These phones can  
determine their particular context or location and then automatically  
configure themselves as by adjusting their settings. Doing so  
ensures that a cell phone's behavior is consistent with behaviors that  
have been determined to be appropriate for a given location.

1       The above passage thus describes an exemplary cell phone's on  
2 board componentry. Additionally, the specification contains additional  
3 descriptions of componentry, such as that which is shown and described in  
4 connection with Fig. 7, which further sets out examples of how the  
5 componentry functions. Applicant submits that this description is sufficient  
6 to enable one of skill in the art to practice an embodiment covered by the  
7 claim. Accordingly, the Office's rejection is traversed.

#### 8 9       The § 102 Rejections

10       Claims 2-3, 5-9, 11, 13-16, 24-27, 29-30, 54-55, and 57 stand  
11 rejected under 35 U.S.C. § 102(a) as being anticipated by PCT Pu. Number  
12 WO 99/55102 to Te-eni (hereinafter "Te-eni").

#### 13 14       The § 103 Rejections

15       Claims 17-19, 21-23, and 58 stand rejected under § 103(a) as being  
16 unpatentable by Te-eni.

17       Claims 10, 12, and 20 stand rejected under § 103(a) as being  
18 unpatentable by Te-eni in view of Finke-Anlauff.

19       Claims 36, 41, and 42 stand rejected under § 103(a) as being  
20 unpatentable by Kovac et al ("Adaptive Mobile Access to Context-aware  
21 Service", IEEE 1999, pp. 190-201).

22       Claims 31-33, 35, 37-38, 40, and 43-47 stand rejected under § 103(a)  
23 as being unpatentable by Kovac in view of Te-eni.

1        Claims 34 and 39 stand rejected under § 103(a) as being  
2 unpatentable by Kovac in view of Te-eni and further in view of Finke-  
3 Anlauff.

4        Claims 48 and 50 stand rejected under § 103(a) as being  
5 unpatentable by U.S. Patent No. 6,389,288 to Kuwahara et al (hereinafter  
6 "Kuwahara").

7        Claims 4, 51-53, and 56 stand rejected under § 103(a) as being  
8 unpatentable by Te-eni.

9  
10        Claims 2-5

11        Claim 5 recites a *cellular phone* comprising:

- 12
- 13        • one or more processors configured to:
    - 14            ○ receive information that pertains to a current context of
    - 15            the cellular phone;
    - 16            ○ *determine the current context based on the*
    - 17            *information;*
    - 18            ○ modify at least one behavior of the cellular phone
    - 19            responsive to the current context; and
  - 20        • an application program interface that is configured to
  - 21            wirelessly receive information that is associated with the
  - 22            phone's context.

23        In making out the rejection of claim 5, the Office argues that Te-eni  
24 anticipates this claim. However, the Office fails to cite any portion of Te-  
25 eni that teaches or suggests a *cellular phone* configured to determine the  
current context.

26        Te-eni teaches a system that is perhaps best appreciated from its Fig.  
27 3 and the related discussion starting on page 10, line 11. There, a so-called



1 regulated area 31 includes an associated front end unit 34 that can either be  
2 located within the regulated area or closely nearby. The front end unit has a  
3 number of different antennas 36-38 that receive signals from a mobile unit  
4 32. The front end unit determines the signal strength and/or propagation  
5 delays of these signals and then communicates this information to a base  
6 station 39 which, in turn, relays the measurements to a Mobile Switching  
7 Center that includes a processor unit 30 that calculates the location of the  
8 mobile units in the vicinity of the regulated area.

9 Te-eni does not teach or even remotely suggest a *cellular phone*  
10 comprising one or more processors *configured to determine the current*  
11 *context*. In point of fact, Te-eni *teaches directly away* from Applicant's  
12 claimed subject matter by specifically teaching that the location of the  
13 processor unit that ultimately determines the location of the mobile unit  
14 "may be either within the front end unit 34 or within the base station 39 as  
15 well as the Mobile Switching Center 30." (See Page 11, Lines 7-10.)  
16 Accordingly, for at least this reason, claim 5 is allowable.

17 **Claims 2-4** depend from claim 5 and, as such, are allowable as  
18 depending from an allowable base claim. These claims are also allowable  
19 for their own recited features which, in combination with those recited in  
20 claim 5, are neither shown nor suggested by the references of record either  
21 singly or in combination with one another.

#### 22 **Claims 6-14**

23 **Claim 6** has been amended and recites a method of operating a  
24 *cellular phone* comprising [amended language appears in bold italics]:  
25

- wirelessly receiving, with the cellular phone, information that pertains to a context of the cellular phone, the cellular phone being configured to receive said information from different types of context providers that provide different forms of information;
- responsive to said receiving and using only the cellular phone and its associated on-board componentry, *determining a cellular phone context and* modifying at least one behavior associated with the cellular phone.

In making out the rejection of this claim, the Office argues that this claim is anticipated by Te-eni. However, as noted above, nowhere does Te-eni teach or suggest a *cellular phone* which determines its context. As noted above, Te-eni teaches directly away from any such subject matter. Accordingly, for at least this reason, this claim is allowable.

Claims 7-14 depend from claim 6 and, as such, are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 6, are neither shown nor suggested by the references of record either singly or in combination with one another. Further, given the allowability of these claims, the rejection of claims 10 and 12 over the combination with Finke-Anlauff is not seen to add anything of significance.

#### Claims 15-16

Claim 15 has been amended and recites one or more readable media having readable instructions thereon which, when executed by a cellular

1 phone, cause the cellular phone to [amended language appears in bold  
2 italics]:

- 3 • wirelessly receive information from different context source
- 4 information types that provide different forms of information
- 5 that pertains to a context of the cellular phone; and
- 6 • responsive to receiving the information, *determine the*
- 7 *cellular phone context* and modify at least one behavior
- 8 associated with the cellular phone.

9 In making out the rejection of this claim, the Office argues that this  
10 claim is anticipated by Te-eni. However, nowhere does Te-eni teach or  
11 suggest one or more readable media having readable instructions thereon  
12 which, when executed by a cellular phone, cause the *cellular phone to*  
13 *determine a cellular phone context*. As noted above, Te-eni teaches  
14 directly away from any such subject matter. Accordingly, for at least this  
15 reason, this claim is allowable.

16 Claim 16 depends from claim 15 and, as such, is allowable as  
17 depending from an allowable base claim. This claim is also allowable for  
18 its own recited features which, in combination with those recited in claim  
19 15, are neither shown nor suggested by the references of record either  
20 singly or in combination with one another.

### 21 Claims 17-23

22 Claim 17 recites a cellular phone comprising:

- 23 • multiple different types of location providers which
- 24 collectively are configured to receive different forms of
- 25

location information *that can be used by the cellular phone to ascertain its location*; and

- one or more processors configured to:
  - receive information associated with a current location of the cellular phone; and
  - modify at least one behavior of the cellular phone responsive to the information.

In making out the rejection of this claim, the Office argues that the subject matter of this claim is either disclosed or suggested by Te-*eni*. Specifically, the Office argues, citing to column 10, line 27 through column 12, line 1, that Te-*eni* discloses a mobile phone that uses different methods for obtaining accuracy of location information. This is simply not the case. The passage cited by the Office describes a front end unit 34 that employs signal strength and/or signal propagation delays to develop information that is then sent on to a base station 39 and further to a Mobile Switching Center 30 that determines location. Applicant respectfully submits that the Office has mis-characterized this reference.

Te-*eni* neither teaches nor suggests a cellular phone that is capable of ascertaining its location. Applicant has reviewed the Te-*eni* reference and respectfully submits that this feature is neither taught nor suggested by Te-*eni*. In point of fact, Te-*eni* teaches directly away from a cellular phone that comprises multiple different types of location providers which are collectively configured to receive different forms of location information that can be used by the cellular phone to ascertain its location. Accordingly, the Office has failed to establish a *prima facie* case of obviousness. As such, this claim is allowable.

1       **Claims 18-23** depend from claim 17 and, as such, are allowable as  
2 depending from an allowable base claim. These claims are also allowable  
3 for their own recited features which, in combination with those recited in  
4 claim 17, are neither shown nor suggested by the references of record either  
5 singly or in combination with one another. In addition, given the  
6 allowability of these claims, the rejection of claim 20 over the combination  
7 with Finke-Anlauff is not seen to add anything of significance.

8  
9       **Claims 24-47**

10       **Claim 24** has been amended and recites a cellular phone comprising  
11 [amended language appears in bold italics]:

- 12
- 13       • receiving means configured to wirelessly receive multiple  
14       different forms of information that pertains to a current  
15       location of a cellular phone *and use said multiple different*  
16       *forms of information to ascertain the current location*; and
  - 17       • means to modify at least one behavior associated with the  
18       cellular phone responsive to said information.

19       In making out the rejection of this claim, the Office argues that this  
20 claim is anticipated by Te-eni. However, Te-eni neither discloses nor  
21 suggests a cellular phone with receiving means configured to receive  
22 multiple different forms of information that pertains to a current location of  
23 a cellular phone and use said multiple different forms of information *to*  
24 *ascertain the current location*. Accordingly, for at least this reason, this  
25 claim is allowable.

1       **Claims 25-27** depend from claim 24 and, as such, are allowable as  
2 depending from an allowable base claim. These claims are also allowable  
3 for their own recited features which, in combination with those recited in  
4 claim 24, are neither shown nor suggested by the references of record either  
5 singly or in combination with one another.

6  
7       **Claims 29-30**

8       **Claim 29** recites a method of managing cellular phone behavior  
9 comprising:

- 10  
11       • defining one or more cellular phone behaviors for a given  
12       location; and  
13       • wirelessly transmitting information to cellular phones within  
14       that location that permits cellular phones to automatically  
15       modify their behavior while in that location, wherein said  
16       transmitting information comprises transmitting information  
17       that is associated with a *location type* that has attributes that  
18       define a cellular phone behavior.

19       In making out the rejection of this claim, the Office argues that Te-  
20       eni anticipates this claim. However, the Office fails to cite any portion of  
21       Te-eni that teaches or suggests transmitting information associated with a  
22       *location type* that has attributes that define a cellular phone behavior.  
23       Applicant has reviewed the Te-eni reference and submits that this feature is  
24       neither taught nor suggested by Te-eni.

25       As noted in Applicant's specification, page 57 starting at line 3, the  
association of location and behaviors is simplified through the use of  
multiple class types and various attributes that are associated with the class

1 types. The class types define certain high level locations types. Each class  
2 type's attributes define the behavior of the cell phone when it is in the  
3 vicinity of an instance of that class. A particularly insightful example is  
4 provided in Applicant's Fig. 16 and the related discussion appearing in the  
5 specification on page 57, line 7-17.

6 Te-eni neither discloses nor suggests any such subject matter.  
7 Rather, Te-eni *teaches directly away* from the subject matter of this claim  
8 by specifically teaching that a basic usage policy is defined for each  
9 location *instance*. (See Table 1.) In fact, as Te-eni's Table 1 shows, there  
10 may be more than one usage policy for a particular location *instance*. In no  
11 way does Te-eni associate the usage policy with a *location type* as that term  
12 is defined and used in Applicant's specification. Accordingly, for at least  
13 this reason, this claim is allowable.

14 Claim 30 depends from claim 29 and, as such, is allowable as  
15 depending from an allowable base claim. This claim is also allowable for  
16 its own recited features which, in combination with those recited in claim  
17 29, are neither shown nor suggested by the references of record, either  
18 singly or in combination with one another.

#### 19 20 Claims 31-35

21 Claim 31 recites a method of managing cellular phone behavior  
22 comprising:

- 23  
24 • providing one or more transmitters that are configured to  
25 transmit information that permits cellular phones to  
automatically modify their behavior, *at least a portion of the*

1 *information pertaining to one or more class types individual*  
2 *ones of which are associated with various attributes that*  
3 *define the behavior of cellular phones;*

- 4 • placing the one or more transmitters in a location where a
- 5 particular cellular phone behavior is desired; and
- 6 • transmitting information using said one or more transmitters.

7 In making out the rejection of this claim, the Office argues that the  
8 subject matter of this claim is suggested by the combination of Kovacs and  
9 Te-eni. Specifically, the Office argues that Kovacs discloses all of the  
10 limitations of this claim except for clearly disclosing one or more  
11 transmitters at the location where a particular phone behavior is desired.  
12 The Office then argues that Te-eni discloses this missing feature. Applicant  
13 respectfully but strongly disagrees.

14 First, Kovacs does not disclose or suggest anything similar to class  
15 types, as that term is defined and used in Applicant's specification. As  
16 noted earlier, Te-eni *teaches directly away* from the subject matter of this  
17 claim by specifically teaching that a basic usage policy is defined for each  
18 location *instance*. This usage policy is not associated with a *class type* as  
19 that term is defined and used in Applicant's specification. Accordingly, for  
20 at least this reason, the Office has failed to establish a *prima facie* case of  
21 obviousness and this claim is allowable.

22 **Claims 32-35** depend from claim 31 and, as such, are allowable as  
23 depending from an allowable base claim. These claims are also allowable  
24 for their own recited features which, in combination with those recited in  
25 claim 31, are neither shown nor suggested by the references of record either  
singly or in combination with one another. The addition of the Finke-



1 Anlauff reference in rejection of claim 34 is not seen to add anything of  
2 significance given the allowability of claim 31.

3  
4 **Claims 36-40**

5 **Claim 36** recites a method of managing cellular phone behavior  
6 comprising:

- 7
- 8 • defining one or more class types each of which can be  
9 associated with a location for which a particular cellular  
10 phone behavior is desired; and
  - 11 • associating attributes with the one or more class types, the  
12 attributes defining cellular phone behavior.

13  
14 As noted in the specification on page 57, lines 3-17:

15 In one embodiment, the association of location and behaviors  
16 is simplified through the use of multiple class types and various  
17 attributes that are associated with the class types. *The class types*  
18 *define certain high level locations types.* Each class type's  
19 attributes define the behavior of the cell phone when it is in the  
20 vicinity of an instance of that class. As an example consider theater  
21 1602 which is an instance of a class type 1. The attributes associated  
22 with a class type 1 are that the cell phone ringer is OFF. No other  
23 attributes are associated with this class type. Restaurant 1604 is an  
24 instance of a class type 2. The attributes associated with this class  
25 type are that the cell phone ringer is ON and the volume is LOW.  
Work 1606 is an instance of a class type 3. Attributes associated  
with this class type are that the ringer is OFF and calls are  
automatically forwarded to an office phone. Home 1608 is an  
instance of a class type 4 whose attributes are that the ringer is ON  
and calls are automatically forwarded to a home telephone number.  
Sports arena 1610 is an instance of a class type 5 whose attributes  
include that the ringer is ON, the volume is VERY HIGH, and  
vibration mode is ON.

1        Thus, as utilized in this claim, a class type constitutes an abstraction  
2        that simplifies the association of locations and behaviors.

3        In making out the rejection of this claim, the Office argues that the  
4        subject matter of this claim is suggested by Kovacs. Specifically, the  
5        Office argues that Kovacs discloses different classes for context  
6        information in section 5, page 195. Applicant respectfully disagrees that  
7        Kovacs discloses *class types* as Applicant defines and uses the term. Within  
8        section 5, Kovacs lists various context information of interest: type of end-  
9        terminal used by user (e.g., mobile phone vs. PDA vs. desktop computer),  
10       state of the end terminal (connected / disconnected), quality-of-service of  
11       the network connection, changes in the network connection, geographic  
12       location, user preferences for notification mechanism, and user preferences  
13       for security (trusted places). This list of various context information of  
14       interest to Kovacs is in no way analogous to Applicant's class types, which  
15       define certain types of high-level locations types. Accordingly, for at least  
16       this reason, this claim is allowable.

17       Claims 37-40 depend from claim 36 and, as such, are allowable as  
18       depending from an allowable base claim. These claims are also allowable  
19       for their own recited features which, in combination with those recited in  
20       claim 36, are neither shown nor suggested by the references of record either  
21       singly or in combination with one another. The additions of the Te-  
22       eni reference in rejection of claims 37-39 and the Finke-Anlauff reference in  
23       rejection of claim 39 are not seen to add anything of significance, given the  
24       allowability of claim 36.

**Claim 41**

**Claim 41** recites a method of managing cellular phone behavior comprising:

- *defining one or more class types* each of which can be associated with a location for which a particular cellular phone behavior is desired;
- associating attributes with the one or more class types, the attributes defining cellular phone behavior; and
- *associating a class type with a location* for which a particular cellular phone behavior is desired.

In making out the rejection of this claim, the Office argues that the subject matter of this claim is suggested by Kovacs. Applicant respectfully disagrees. As pointed out above, Kovacs neither discloses nor suggests a method in which one or more *class types* are defined and then associated with a location for which a particular cellular phone behavior is desired. Accordingly, for at least this reason, this claim is allowable.

**Claims 42-47**

**Claim 42** recites a method of managing cellular phone behavior comprising:

- *associating a class type with a location* for which a particular cellular phone behavior is desired, the class type having attributes that define the cellular phone's behavior; and
- *wirelessly transmitting information pertaining to the class type* for reception by cellular phones in the location, the information being configured to be used by cellular phones to automatically adjust one or more behaviors.

1  
2 In making out the rejection of this claim, the Office argues that the  
3 subject matter of this claim is suggested by Kovacs. Applicant respectfully  
4 disagrees. As pointed out above, Kovacs neither discloses nor suggests a  
5 method in which a class type is associated with a location for which a  
6 particular cellular phone behavior is desired. Accordingly, for at least this  
7 reason, this claim is allowable.

8 Claims 43-47 depend from claim 42 and, as such, are allowable as  
9 depending from an allowable base claim. These claims are also allowable  
10 for their own recited features which, in combination with those recited in  
11 claim 42, are neither shown nor suggested by the references of record either  
12 singly or in combination with one another. The addition of the Te-  
13 ni reference in rejection of claims 43-47 is not seen to add anything of  
14 significance, given the allowability of claim 42.

15  
16 **Claim 48**

17 Claim 48 recites a location-aware cell phone that can, *using only*  
18 *location information that it receives and its on-board componentry*,  
19 determine its location and automatically adjust one or more of its settings  
20 so that it behaves in a manner that has been defined for that location.

21 In making out the rejection of this claim, the Office argues that the  
22 subject matter of this claim is suggested by Kuwahara. Specifically, the  
23 Office argues that "unless call answer options are desired, only reported  
24 location and on-board componentry (i.e., refs. 1-10 in Fig. 1) are used for  
25 adjusting phone setting." The Office then argues that it would have been

1 obvious to modify Kuwahara for using only reported location and on-board  
2 componentry for adjusting phone setting. Applicant respectfully but  
3 strongly disagrees.

4 Kuwahara defines "registered process executing means" in its  
5 "Summary" section beginning in column 4, line 65. This excerpt is set forth  
6 below:

7 The registered process executing means may comprise call incoming  
8 alert mode selecting means for *selecting a call incoming alert mode*.

9 With this construction, the user of the mobile communication  
10 terminal can set a call incoming mode of the mobile communication  
11 terminal to a ringing tone, a vibrator or a display so that the selected  
12 mode is executed automatically depending on the location of the  
13 user.

14 The registered process executing means may comprise call incoming  
15 refusal selecting means for selecting one of *setting and cancellation*  
16 *of call incoming refusal*.

17 With this construction, the user of the mobile communication  
18 terminal can set or cancel the "call incoming refusal" execution  
19 service so that the selected mode is automatically depending on the  
20 location of the user.

21 The registered process executing means may comprise answer phone  
22 selecting means for selecting one of *setting and cancellation of an*  
23 *answer phone service*.

24 With this construction, the user of the mobile communication  
25 terminal can set or cancel the "answer phone" execution service so  
that the selected mode is automatically executed depending on the  
location of the user.

The registered process executing means may comprise call  
destination terminal setting execution means for executing *setting of*  
*a call destination terminal*.

With this construction, for example, the user of the mobile

1 communication terminal can set an incoming call destined to a  
2 portable telephone set to automatically arrive at a domestic  
3 telephone set.

4 The registered process executing means may comprise screening  
5 setting means for *setting screening for variable call incoming mode*  
6 that depends on an attribute assigned to a call originator and a  
7 condition of the call originator.

8 With this construction, the user of the mobile communication  
9 terminal can set the screening to a private mode for preventing a  
10 business call from arriving when the user is at home or to a work  
11 mode for preventing a private call from arriving while the user is at  
12 work so that the selected mode is executed automatically depending  
13 on the location of the user.

14 Thus, every embodiment taught by Kuwahara involves "call answer  
15 options." Every embodiment of the registered process executing means  
16 relies on a Personal Number Server 41 (Figs. 6 and 19) -- componentry that  
17 is not on-board its mobile communication terminal unit. Applicant submits  
18 that nothing in Kuwahara teaches or suggests a location-aware cell phone  
19 that can, *using only location information that it receives and its on-board*  
20 *componentry*, determine its location and automatically adjust one or more  
21 of its settings so that it behaves in a manner that has been defined for that  
22 location. In fact, Kuwahara *teaches directly away* from the subject matter  
23 of claim 48 by its reliance on a component that is not on-board the mobile  
24 communication terminal unit. Accordingly, for at least this reason, this  
25 claim is allowable.

### Claim 50

Claim 50 recites a method of operating a cellular phone comprising:

- providing a cellular phone; and
- determining, with the cellular phone, a present cellular phone location wherein said determining comprises:
  - receiving location information;
  - accessing one or more hierarchical tree structures having nodes that correspond to locations; and
  - using the location information to traverse at least portions of the one or more tree structures to ascertain the present location.

In making out the rejection of this claim, the Office argues that the subject matter of this claim is suggested by Kuwahara. Specifically, the Office argues that it would have been obvious to use a hierarchical traversable tree structure in order to traverse from the reported location of Kuwahara's zone area to get a corresponding user-defined area vector name. Applicant respectfully but strongly disagrees.

There appears to be no teaching or suggestion of a hierarchical structure to Kuwahara's zones (see Figs. 12 and 13). Hence, it would not have been obvious to use a hierarchical traversable tree structure for the zones themselves. Similarly, there appears to be no teaching or suggestion of a hierarchical structure to Kuwahara's user-defined area names (see Figs. 12 and 13) or user-defined area vector names (see Fig. 21). Hence, it would not have been obvious to use a hierarchical traversable tree structure for the user-defined area names or user-defined area vector names either. Furthermore, each instance of Kuwahara's reported location information (see Figs. 12 and 13) or variation of reported location information (see Fig. 21) is associated with at most one unique user-defined name, whether an area name or an area vector name. Therefore, it would *not* have been

1 obvious to one skilled in the art to use a hierarchical traversable tree  
2 structure to do a simple lookup function based on non-hierarchical keys,  
3 particularly when the target data consists of at most one item for a given  
4 key. Accordingly, for at least this reason, this claim is allowable.

5  
6 **Claims 51-53**

7 **Claim 51** recites a *cellular phone* comprising:

- 8
- 9 • one or more computer-readable media;
  - 10 • one or more hierarchical traversable tree structures resident  
11 on the computer-readable media, the tree structures  
12 comprising individual nodes each of which being associated  
13 with a phone context; and
  - 14 • one or more processors configured to:
    - 15 ○ receive information that pertains to a current context of  
16 the cellular phone;
    - 17 ○ automatically determine the current context based on  
18 the information by traversing at least one node on one  
19 of the trees; and
    - 20 ○ modify at least one behavior of the cellular phone  
21 responsive to the current context.
- 22

23 In making out the rejection of this claim, the Office argues that the  
24 subject matter of this claim is suggested by Te-eni. However, the Office  
25 fails to cite any portion of Te-eni that teaches or suggests a *cellular phone*  
configured to automatically determine the current context. Applicant has  
reviewed the Te-eni reference and argues that this feature is neither taught  
nor suggested by Te-eni. Accordingly, for at least this reason, this claim is  
allowable. In addition, the Office argues that since the use of a hierarchical



1 traversable tree structure is known, in general, it would be obvious to  
2 incorporate its use in Te-*eni*'s system.

3 Applicant submits that the Office has failed to establish a *prima*  
4 *facie* case of obviousness for reasons that include a complete disregard for  
5 the court-established standards for establishing obviousness. Specifically,  
6 the motivation to modify a reference must come from the reference itself or  
7 the prior art generally. Additionally, there must be *particular findings* that  
8 establish why a skilled artisan would be motivated to modify a particular  
9 reference. The Office's statement that "since the use of hierarchical  
10 traversable tree structures is known, hence, when receiving the instructed  
11 call indication mode (i.e. switching from ring to vibration mode), it would  
12 have been obvious ...to use a hierarchical traversable tree structure in order  
13 to traverse from one mode to another mode to set the phone to operate in  
14 the instructed mode" falls far short of the mark. Accordingly, for at least  
15 this additional reason, this claim is allowable.

16 **Claims 52 and 53** depend from claim 51 and, as such, are allowable  
17 as depending from an allowable base claim. These claims are also  
18 allowable for their own recited features which, in combination with those  
19 recited in claim 51, are neither shown nor suggested by the references of  
20 record either singly or in combination with one another.

21  
22 **Claims 54-57**

23 **Claim 54** recites a *cellular phone* comprising:  
24  
25

- a context service module that is configured to receive different forms of information from multiple different types of context providers; and
- one or more processors associated with the context service module and configured to:
  - receive information that pertains to a current context of the cellular phone;
  - determine the current context based on the information; and
  - modify at least one behavior of the cellular phone responsive to the current context.

In making out the rejection of this claim, the Office argues that this claim is anticipated by Te-*eni*. However, the Office fails to cite any portion of Te-*eni* that teaches or suggests a *cellular phone* configured to determine the current context. The applicant has reviewed the Te-*eni* reference and submits that this feature is neither taught nor suggested by Te-*eni*. In point of fact, Te-*eni* teaches directly away from the subject matter of this claim. Accordingly, for at least this reason, this claim is allowable.

Claims 55-57 depend from claim 54 and, as such, are allowable as depending from an allowable base claim. These claims are also allowable for their own recited features which, in combination with those recited in claim 54, are neither shown nor suggested by the references of record either singly or in combination with one another.

#### Claim 58

Claim 58 recites a *cellular phone* comprising:

- location provider means for receiving different forms of location information;

- means for ascertaining a location from the location information; and
- means for modifying at least one behavior associated with the cellular phone responsive to ascertaining said location.

In making out the rejection of this claim, the Office argues that the subject matter of this claim is suggested by Te-eni. However, the Office fails to cite any portion of Te-eni that teaches or suggests a *cellular phone* with *means for ascertaining a location*. The applicant has reviewed the Te-eni reference and submits that this feature is neither taught nor suggested by Te-eni. In point of fact, Te-eni teaches directly away from any such subject matter. Accordingly, for at least this reason, this claim is allowable.

### Conclusion

All of the claims are in condition for allowance. Accordingly, Applicant requests a Notice of Allowability be issued forthwith. If the Office's next anticipated action is to be anything other than issuance of a Notice of Allowability, Applicant respectfully requests a telephone call for the purpose of scheduling an interview.

Respectfully submitted,

Dated: 7/7/03

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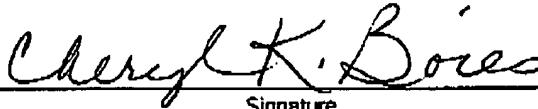
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